Space Nutrition

Volume 1 | Space Research is "Phabulous" | Issue #6

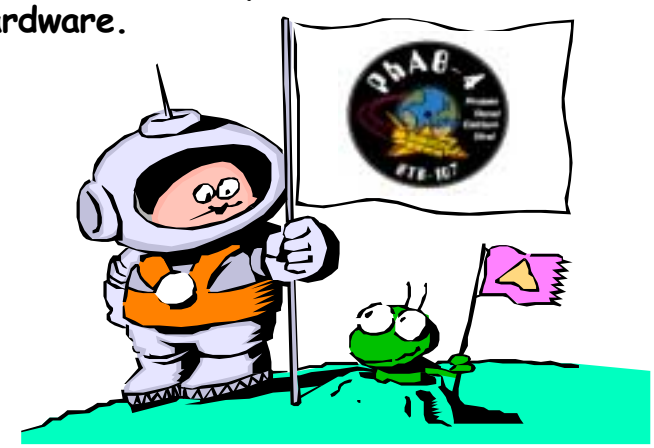
Mission Facts

We are at approximately Launch minus 110 days (L-110), if the launch date remains July 11. During the month of March, the astronauts participating in the PhAB-4 experiments continue to train for the mission. Many of the PhAB-4 procedures will take place in the SpaceHab Module. In March, the STS-107 crew traveled to the Kennedy Space Center, where they became more familiar with the layout of the SpaceHab.

Career Facts

The Experiment Systems Manager (ESM), leads the team that helps the principal investigators (PIs) get their experiments into space. Basically, the ESM helps to turn the PIs' experiments into the actual activities that the astronauts perform in space. The ESM and their team are completing many different tasks for STS-107. These include making sure that all of the hardware and tools the astronauts need for the experiments are built and tested, that everything the experiments need on STS-107 is ready, and that everything happens at the right time. The ESM usually has a college degree in engineering.

E381, Calcium Kinetics, is one of the 4 experiments that together make up the Physiology and Biochemistry-4 or PhAB-4 experiments. The other PhAB-4 experiments are Renal Stone Risk During Space Flight (E057), Protein Turnover (E048), and Incidence of Latent Virus Shedding During Space Flight (E409). These experiments have been grouped together because they have similar needs for samples and hardware.



During space flight, the risk of forming a kidney stone is increased. This is due, in part, to the increased amount of calcium lost (from bones) in urine. In E057, researchers will study how well a medication - potassium citrate - decreases the risk of getting kidney stones.

Space travelers lose muscle in addition to bone. In E048, researchers will study the turnover of muscle protein before, during, and after space flight. Turnover is the cycle of formation and destruction.

Stress leads to a decreased immune response that can allow latent viruses to multiply and be released in saliva, urine, and blood. In E409, researchers will see if this happens to specific viruses during space flight. This study will compare the level of stress with the levels of viruses released.

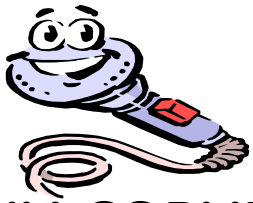
Did you know?

- The ESM also makes sure that the crew receives training to do the experiments.
- During training for STS-107, the crew, experiment teams, and mission control teams will participate in Joint Integrated Simulations. These JISs are integrated - that is, participants use all the skills they have learned in individual training sessions.
- Aerobic exercise has been shown to reduce muscle loss and increase cardiovascular fitness during space flight.
- Increasing fluid intake on-orbit reduces the risk of kidney stones.
- There are seven human herpes viruses, most of which are quite harmless. Nearly all adults are infected with one or more of these viruses.

Word of the Month

Simulation

Can you guess what this word means? Look for the meaning of the "Word of the Month" in the next issue of Space Nutrition.



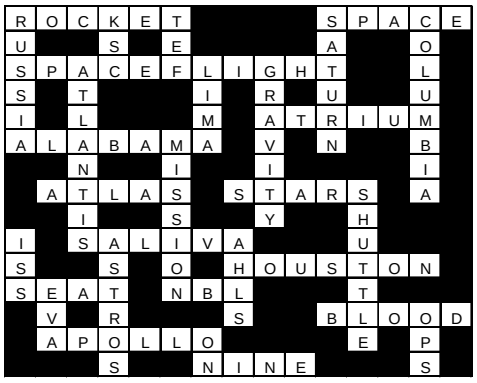
FUN CORNER

Find these space research words:

Blood	**Barcode**	**MET**
Tracer	**Launch**	**Science**
Shuttle	**Urine**	**Isotope**
ISS	**GMT**	**Glove**

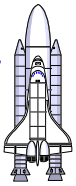
B	G	L	O	V	E	I
L	A	T	A	I	S	S
O	L	R	C	C	L	0
O	I	A	C	G	M	T
D	L	C	O	O	E	O
H	A	E	I	A	D	P
O	U	R	I	N	E	E
R	N	I	M	E	T	N
E	C	N	E	I	C	S
S	H	U	T	T	L	E

Solution to Last Month's Crossword



Check out these cool NASA links for more fun space science facts:

http://virtualastronaut.jsc.nasa.gov
http://lsda.jsc.nasa.gov
http://www.spaceflight.nasa.gov



Check out the Nutritional Biochemistry Laboratory's website for more information about nutrition and space.

www.jsc.nasa.gov/sa/sd/facility/nutrition.htm